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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/501,902

07/20/2004

Yundong Wang

4662-282

9014

23117 7590 11/25/2008  
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EXAMINER

NUTTER, NATHAN M

ART UNIT

PAPER NUMBER

1796

MAIL DATE

DELIVERY MODE

11/25/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/501,902	<b>Applicant(s)</b> WANG ET AL.	
	<b>Examiner</b> Nathan M. Nutter	<b>Art Unit</b> 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 28 October 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 26-42 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 26-42 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 28 October 2008 has been entered.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 26-40 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Wang et al (US 5,963,039).

The reference to Wang et al teaches the method, as recited herein, at the Abstract, column 5 (lines 5-27), the paragraph bridging column 2 to column 3 and column 4 (lines 25-45) for the thermoplastic constituents, the paragraph bridging column 4 to column 5 for the use of EPDM rubbers, column 7 (lines 15-28), column 7 (line 65) to column 8 (line 30) for the two-step process that provides a partially cured DVA for addition to a second thermoplastic with subsequent further dynamic vulcanization. The

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first vessel contains thermoplastic polyolefin, elastomer and the curing agent added, followed by dynamic vulcanization to partially vulcanize the composition. This is removed, palletized and then added to the second vessel (twin screw extruder) with the thermoplastic engineering resin and compatibilizers. The reference clearly shows at the paragraph bridging column 7 to column 8 the use of two vessels. Note column 8 (lines 35-48) for the extruders employed. Note Example 1 at column 9 and Table I bridging column 9 to column 10, which shows a first curing agent and a second phenolic resin curing agent. The reference also teaches the use of zinc oxide which is also a curing agent. Finally, the reference teaches at column 3 (lines 34-44) that the “elastomer is desirably at least partially cured (crosslinked) during the dynamic vulcanization, and preferably is fully cured or completely cured,” which would embrace the limitations of claims 22, 23, 34 and 35.

Claims 26, 27, 29-33 and 36-42 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Rinehart (US 4,220,579).

Note the Abstract, column 2 (lines 28 et seq.), column 3 (lines 21 et seq.), column 6 (lines 37 et seq.), column 7 (line 3) to column 8 (line 47), column 9 (lines 27-40), column 13, Example 2, and Table II at column 14.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 26-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang et al (US 5,963,039) in combination with Komatsu et al (US 4,873,288).

The reference to Wang et al teaches the method, as recited herein, at the Abstract, column 5 (lines 5-27), the paragraph bridging column 2 to column 3 and column 4 (lines 25-45) for the thermoplastic constituents, the paragraph bridging column 4 to column 5 for the use of EPDM rubbers, column 7 (lines 15-28), column 7 (line 65) to column 8 (line 30) for the two-step process that provides a partially cured DVA for addition to a second thermoplastic with subsequent further dynamic vulcanization. Note column 8 (lines 35-48) for the extruders employed. The reference teaches at column 5 (lines 5-27) that "(a)ny known cure system can be used" and include "sulfur, sulfur donors, peroxide-based systems, resin systems, etc.. Finally, the reference teaches at column 3 (lines 34-44) that the "elastomer is desirably at least partially cured (crosslinked) during the dynamic vulcanization, and preferably is fully cured or completely cured," which would embrace the limitations of claims 22, 23, 34 and 35.

Komatsu et al teach essentially what is recited herein except the particular cross-linking agents and the particular gel contents of claims 22, 23, 34 and 35. It would be an obvious modification to employ the crosslinking agents of Wang et al in the process as set out by Komatsu et al. It is submitted that, since the second step effects a further dynamic vulcanization that results in a product denoted in the instant patent as

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“crosslinked” see the claims, the product would certainly give a gel of at least 50%. A skilled artisan would know how to manipulate the degree of crosslinking to provide a product suitable for the particular end use to which it may be assigned, and that this would include a high gel content, as recited herein in instant claims 24 and 35.

Claims 26, 27, 29-33 and 36-42 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Rinehart (US 4,220,579).

The reference teaches the identical concept as shown above, except the use of the same equipment in sequence and the gel content of the vulcanized rubber component. The use of equipment either in parallel or in series is a matter of preference. Both are used substantially interchangeably. The specific gel content would be a variable within the skill of the artisan with an eye to the end-use of the composition.

### ***Response to Arguments***

Applicant's arguments filed 31 July 2007 have been fully considered but they are not persuasive.

With respect to the rejection of claims 26-40 under 35 U.S.C. 102(b) as being clearly anticipated by Wang et al (US 5,963,039), the reference teaches at column 5 (lines 5-27) that “(a)ny known cure system can be used” and include “sulfur, sulfur donors, peroxide-based systems, resin systems, etc..” Applicants are reminded that a reference is viewed for the entirety of its teachings, and not for an isolated example. The rubber of the reference is cured twice, as recited herein. Applicant has failed to

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provide any comparison of the instantly claimed invention with that taught by the reference. Applicants' diagrams on pages 7, 9, 11 and 12 are not deemed to persuade the Examiner since they are representations of applicants' interpretation of isolated passages from the reference, without taking into context the teachings of the reference in their entirety. For example, the engineering resin, as well as the compatibilizer, is clearly thermoplastic, yet applicants overlook this feature. The same is true of the curing agents employed.

With respect to the rejection of claims 26-40 under 35 U.S.C. 103(a) as being unpatentable over Wang et al in combination with Komatsu et al, applicants argue as though the rejection was made under 35 USC 102 over Komatsu et al, alone, which is not the case. The reference is relied upon for the reasons set out.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nathan M. Nutter whose telephone number is 571-272-1076. The examiner can normally be reached on 9:30 a.m.-6:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James J. Seidleck can be reached on 571-272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Nathan M. Nutter/  
Primary Examiner, Art Unit 1796

nmn

21 November 2008